

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 33 (new). A three-dimensional network of silica particles wherein the silica particles are connected by

1) reacting

a1) silica particles functionalized with alkoxy silane coupling agents having functional groups with

b) silica particles functionalized with alkoxy silane coupling agents having different functional groups so that the functional groups of a) and b) are covalently bonded

or

2) reacting silica particles with an organic connecting material wherein the connecting material is diamine, dihalide, or diisocyanate

or

3) reacting silica particles functionalized with alkoxy silane coupling agents having functional groups with c) an organic connecting material wherein the connecting material is diamine, diisocyanate, or dihalide.

Claim 34 (new). Networked silica particles according to claim 33 which are connected by reaction 1) wherein the functional groups of a1) are glycidyl groups and the functional groups of b) are mercapto groups.

Claim 35 (new). Networked silica particles according to claim 33 which are connected by reaction 1) wherein the functional groups of a1) are glycidyl groups and the functional groups of b) are alcohol groups.

Claim 36 (new). Networked silica particles according to claim 33 which are connected by reaction 1) wherein the functional groups of a1) are amine or imine groups and the functional groups of b) are mercapto groups.

Claim 37 (new). Networked silica particles according to claim 33 which are connected by reaction 1) wherein the functional groups of a1) are amine or imine groups and the functional groups of b) are glycidyl groups.

Claim 38 (new). Networked silica particles according to claim 33 which are connected by reaction 1) wherein the coupling agent of a1) is 3-aminopropyltriethoxy silane and the coupling agent of b) is 3-glycidyloxypropyltrimethoxy silane.

Claim 39 (new). Networked silica particles according to claim 33 which are connected by reaction 1) wherein the functional groups of a1) are amine groups and the functional groups of b) are halide groups.

Claim 40 (new). Networked silica particles according to claim 33 which are connected by reaction 1) wherein the functional groups of a1) are 3-aminopropyltriethoxy silane and the functional groups of b) are 3-chloropropyltrimethoxy.

Claim 41. (new). Networked silica particles according to claim 33 which are connected by reaction 2) wherein the connecting material is diamine, diisocyanate, or dihalide.

Claim 42 (new). Networked silica particles according to claim 41 which are connected by reaction 2) wherein the connecting material is diisocyanate.

Claim 43 (new). Networked silica particles according to claim 41 which are connected by reaction 2) wherein the connecting material is dichloride.

Claim 44 (new). Networked silica particles according to claim 41 which are connected by reaction 2) wherein the connecting material is n-hexane diamine.

Claim 45 (new). Networked silica particles according to claim 41 which are connected by reaction 3) wherein the connecting material is diamine, diisocyanate, or dihalide.

Claim 46 (new). Networked silica particles according to claim 45 which are connected by reaction 3) wherein the connecting material is n-hexane diamine.

Claim 47 (new). A three-dimensional network of silica particles of 100 nm or less wherein silica particles are bonded to bridge chains which are connected by means of covalent bonding with other silica particles wherein the bridge chains contain polyimine groups, polyether groups, aliphatic amine, ether, or urethane groups, or aromatic amine, ether, or urethane groups.

Claim 48 (new). Networked silica particles according to claim 47 wherein the bridge chains derived from alkoxy silanes having aliphatic or aromatic amine, ether, or mercapto groups.

Claim 49 (new). Networked silica particles according to claim 47 wherein the silica particles are connected by reaction of a) silica particles bonded to bridge chains having functional groups with b) silica particles bonded to bridge chains having functional groups which are different from the functional groups of a) and capable of reacting with the functional groups of a).

Claim 50 (new). Networked silica particles according to claim 47 wherein the functional groups of a) are glycidyl and the functional groups of b) are mercapto groups.

Claim 51 (new). Networked silica particles according to claim 47 wherein the functional groups of a) are glycidyl and the functional groups of b) are alcohol groups.

Claim 52 (new). Networked silica particles according to claim 47 wherein the functional groups of a) are amines and the functional groups of b) are mercapto groups.

Claim 53 (new). Networked silica particles according to claim 47 wherein the functional groups of a) are amines and functional groups of b) are glycidyl groups.

Claim 54 (new). Networked silica particles according to claim 47 wherein bridge chains of a) are derived from 3-aminopropyltriethoxy silane and the bridge chains of b) are derived from 3-glycidyloxypropyltrimethoxy silane.

Claim 55 (new). Networked silica particles according to claim 47 wherein the functional groups of a) are amines and the functional groups of b) are halide groups.

Claim 56 (new). Networked silica particles according to claim 47 wherein the bridge chains of a) is derived from 3-aminopropyltriethoxy silane and the bridge chains of b) is derived from 3-chloropropyltrimethoxy silane.

Claim 57 (new). A three-dimensional network of silica particles of 100 nm or less wherein silica particles bonded to bridge chains are connected by means of covalent bonding with other silica particles bonded to bridge chains wherein the bridge chains are connected by reaction of a) silica particles or a1) silica particles bonded to bridge chains having at least one functional group with b) connecting material comprising at least one diamine, dichloride, diisocyanate, or dicarboxylic acid.

Claim 58 (new). Networked silica particles according to claim 57 wherein the connecting material is diisocyanate.

Claim 59 (new). Networked silica particles according to claim 57 wherein the connecting material is diisocyanate having methylene chains of C₆ to C₁₀₀.

Claim 60 (new). Networked silica particles according to claim 57 wherein one or more bridge chains is derived from the reaction of silica particles with 3-glycidyloxypropyltrimethoxy silane, and the connecting material is diaminoalkane or diisocynatoalkane.

Claim 61 (new). Networked silica particles according to claim 57 wherein the connecting material contains polyether groups.

Claim 62 (new). A three-dimensionally networked silica particles according to claim 57 wherein the connecting material is dichloride.

Claim 63 (new). Networked silica particles according to claim 57 wherein one or more bridge chains is derived from the reaction of silica particles with 3-glycidyloxypropyltrimethoxy silane, and the connecting material is polyethyleneimine.

Claim 64 (new). A three-dimensional network of silica particles according to claim 57 wherein silica particles bonded to bridge chains are connected by means of covalent bonding with other silica particles bonded to bridge chains wherein the bridge chains are connected by reaction of a) silica particles with b) connecting material comprising at least one diamine, dichloride, diisocyanate, or dicarboxylic acid.